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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/592,224	06/12/2000	Ulrich Emmerling	GR 99 P 2011	5498

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EXAMINER	
YANG, CLARA I	

ART UNIT	PAPER NUMBER
2635	16

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/592,224	EMMERLING ET AL.	
	Examiner	Art Unit	
	Clara Yang	2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☒ Claim(s) *6,9,12 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 22 March 2004 with respect to claims 1 and 14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 1, as amended, calls for the transmitting and receiving station to trigger an access authorization by the function monitoring system when a matching response code from a transponder has been received. Consequently, the transmitting and receiving station is part of an access control system, as required by claim 12.

3. Claims 6, 9, and 18 are objected to because of the following informalities:

- Claims 6 and 9: The claims are not in idiomatic English.
- Claim 18: Remove "_" after "response code".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2 - 5, 12 - 15, 18, 21, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,844,517 (Lambropoulos).

Referring to claims 1, 13, 14, 21, and 23, Lambropoulos teaches a keyless entry system for controlling a vehicle device, such as a vehicle door lock (see Abstract). The system includes: (a) a vehicle transceiver C (i.e., a transmitting and receiving station) mounted on a vehicle and configured to transmit an interrogation code signal (see Col. 2, lines 66 - 67 and Col. 3, lines 1 - 11); and (b) a plurality of remote, portable transceivers/badges A and B or transponders in communication with transceiver C (see Col. 2, lines 51 - 57). Per Lambropoulos, transceivers A and B are configured to (1) receive transceiver C's interrogation signal (see Col. 3, lines 6 - 14 and Col. 6, lines 24 - 28); and (2) respond to the interrogation signal by generating and transmitting a complete response code signal, which is shown in Fig. 4, to transceiver C upon receiving the interrogation signal containing 20 bits of vehicle identification information and 4 bits of code identifying the type of request being transmitted (see Col. 4, lines 30 - 39 and 52 - 61; Col. 5, lines 1 - 20; and Col. 6, lines 46 - 53), wherein all transceivers A and B transmit their complete response code signals simultaneously or in temporal synchronization (see Col. 7, lines 31 - 44 and 58 - 63; Col. 9, lines 66 - 67; and Col. 10, lines 1 - 6) and transceiver C triggers an access authorization when it receives a matching, complete response code signal (see Col. 3, lines 23 - 30 and Col. 6, lines 28 - 37 and 50 - 53).

Regarding claims 2 and 15, per Lambropoulos, transceiver C is selectively configured to transmit the interrogation signal at periodic/regular intervals (see Col. 4, lines 13 - 16; and Col. 6, lines 16 - 32 and 54 - 58).

Regarding claims 3 - 5 and 18, Lambropoulos discloses that transceivers A and B respond at the same time when they are within range of the signal transmitted by transceiver C

(see Col. 9, lines 66 - 67 and Col. 10, lines 1 - 6). In order to avoid interference, Lambropoulos teaches using a time division multiple access (TDMA) protocol such that the coded reply signals transmitted by transceivers A and B are phase displaced and interleaved with one another (see Col. 7, lines 54 - 58), which is shown in Fig. 5. After detecting the falling edge 400 of transceiver C's interrogation signal, transceivers A and B simultaneously transmit their reply signals, wherein the bits of transceiver A's reply signal have a phase delay Φ_1 relative to falling edge 400 and the bits of transceiver B's reply signal have a different phase delay Φ_2 relative to falling edge 400 (see Col. 7, lines 31 - 44). Because transceiver C measures the phase delays from falling edge 400 and is able to separate the composite signal, which is formed by the simultaneously received reply signals from transceivers A and B, into its separate components based on the phase delays (see Col. 9, lines 66 - 67 and Col. 10 ,lines 1 - 6), transceivers A and B must have synchronization devices effecting synchronization with the received interrogation signal's falling edge 400 such that the reply signals of transceivers A and B are generated and transmitted in synchronization (see Col. 7, lines 58 - 63). Furthermore, as shown in Fig. 1, transceiver A (and B) has a microcomputer 10 for controlling carrier oscillator 38 and for providing the bits of transceiver's security code in accordance with phase delay Φ_1 to AND gate 42 in order to modulate the carrier signal (see Col. 4, lines 61 - 67 and Col. 5, lines 1 - 3); hence it is understood that microcomputer 10 is a synchronization device. Prior to generating and transmitting a reply signal, transceivers A and B receive and process the interrogation signal to determine if the interrogation code matches that which is previously stored in transceivers A and B (see Col. 6, lines 24 - 28 and Col. 12, lines 39 - 45). If the interrogation code matches with the one stored in register 52 (see Fig. 1), transceivers A and B generates and transmits their reply signals in synchronization as effected by their synchronization devices. In other words,

microcomputer 10 of transceivers A and B effects synchronization upon a receiving a proper vehicle identification code (i.e., a code signal sequence) contained in the interrogation code signal.

Regarding claim 12, transceiver C of Lambropoulos forms a part of a vehicle access system (see Col. 2, lines 66 - 67 and Col. 3, lines 1 - 6).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 6 - 11, 16, 17, 19, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,844,517 (Lambropoulos) as applied to claims 1, 14, and 21 above, and further in view of U.S. Patent No. 5,952,922 (Shober).

Regarding claims 6 - 11, 19, 20, and 22, Lambropoulos discloses that transceiver A (and B), as shown in Fig. 1, has: (a) radio frequency (RF) oscillator 38 or carrier frequency generator

for generating a carrier frequency signal of 315 MHz (see Col. 4, lines 62 - 65 and Col. 5, lines 1 - 3); and (b) a first modulator for modulating the carrier frequency signal with the transceiver's security code (see Col. 5, lines 1 - 5). As explained in claims 3 - 5 and 18, Lambropoulos teaches using a TDMA scheme to enable transceiver C to receive and process reply signals that are simultaneously transmitted by transceivers A and B. Consequently, Lambropoulos's transceiver A (and B) lacks the elements of claims 6, 7, 9, 10, 19, and 22 as follows: (1) a subcarrier frequency generator for generating a subcarrier frequency signal and for modulating a carrier frequency signal common to all transceivers A and B; (2) a first modulator for modulating the subcarrier frequency signal with a code signal; and (3) a second modulator for modulating the carrier frequency signal with the output signal provided by the first modulator. Likewise, Lambropoulos's transceiver C lacks the elements of claims 8, 11, and 20 (i.e., a plurality of input channels with filters for filtering out frequency components caused by the subcarrier frequency signal) and the ability to evaluate the subcarrier frequency components.

In an analogous art, Shober's monitoring system, as shown in Fig. 1, comprises: (a) a plurality of interrogators 104 and 104 that form a transmitting and receiving station (hereinafter referred to as an "interrogator") configured to transmit an information signal (hereinafter referred to as an "interrogation code signal"); and (b) a plurality of tags 105 and 107 or transponders configured to simultaneously generate and transmit a response code signal to the interrogator upon receipt of the interrogation code signal. (See Col. 1, lines 62 - 67; Col. 2, lines 2 - 6; and Col. 15, lines 50 - 58.) Shober teaches two embodiments for three modes (Interrogation, Location, and Messaging) to operate simultaneously with each other; the two embodiments use TMDA and frequency division multiple access (FDMA). In the FDMA embodiment, each of Shober's tags has (a) a subcarrier generator 308 for generating a subcarrier

frequency f_S that is used to modulate the carrier frequency signal received from the interrogator (see Fig. 3; and Col. 15, lines 41 - 55). Because Shober teaches that the tags send their response code signals by using modulated backscatter (see Abstract), it is understood that the frequency of the continuous wave signal transmitted by the interrogator is the carrier frequency of the response code signals; consequently, the carrier frequency is common to all transponders. After receiving an interrogation code signal, each tag's processor generates an information signal that is then sent to (b) a first modulator control circuit 307. The modulator control circuit uses the information signal to modulate a subcarrier frequency and output modulated subcarrier signal 311, which is then modulated upon the received continuous wave signal by (c) detector/modulator 302 or second modulator in order to produce modulated backscatter. (See Col. 4, lines 29 - 34 and 40 - 45.) Shober discloses that the interrogator instructs each tag as to which subcarrier frequency to use to transmit its uplink signals (see Col. 15, lines 50 - 57). In order for the interrogator to decode simultaneously received uplink signals from the tags, Shober's interrogator, as shown in Figs. 2 and 15, comprises: (d) subcarrier demodulator 212 having a plurality of input channels and filters for filtering out and evaluating the subcarrier frequency components of the received response code signals (see Fig. 15, filters f_{S1} and f_{S2}; Col. 18, lines 40 - 67; and Col. 19, lines 1 - 28).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system and method of Lambropoulos as taught by Shober because both TDMA and FDMA are effective approaches for enabling transceiver C to receive and evaluate reply signals that are simultaneously received from transceivers A and B (see Shober, Col. 15, lines 7 - 64).

Regarding claims 16 and 17, as previously explained, Lambropoulos teaches that transceiver C transmits the interrogation signal at regular time intervals.

Shober teaches that in the location and messaging modes, an applications processor instructs some or all of the interrogators to transmit an interrogation signal to a specific transponder or transponders (see Col. 2, lines 64 - 66; Col. 3, lines 1-6; and Col. 9, lines 13 - 20 and 56 - 62). Here it is understood that the receipt of an instruction signal from an applications processor is a triggering event. Because the interrogator is triggered to transmit an interrogation code signal by the applications processor when operating in the location or messaging modes, it is understood that the interrogation code signal is transmitted at irregular intervals.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system and method of Lambropoulos as taught by Shober because the ability to transmit an interrogation signal in reaction to a triggering event, such as a user touching the door handle of the vehicle or pushing a button on transceiver A or B to transmit a wake-up signal, because periodic transmissions of the interrogation signal consume more power than transmissions of the interrogation signal only when triggered.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until

after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (703) 305-4086. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (703) 305-4704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CY
8 June 2004

BRIAN ZIMMERMAN
PRIMARY EXAMINER